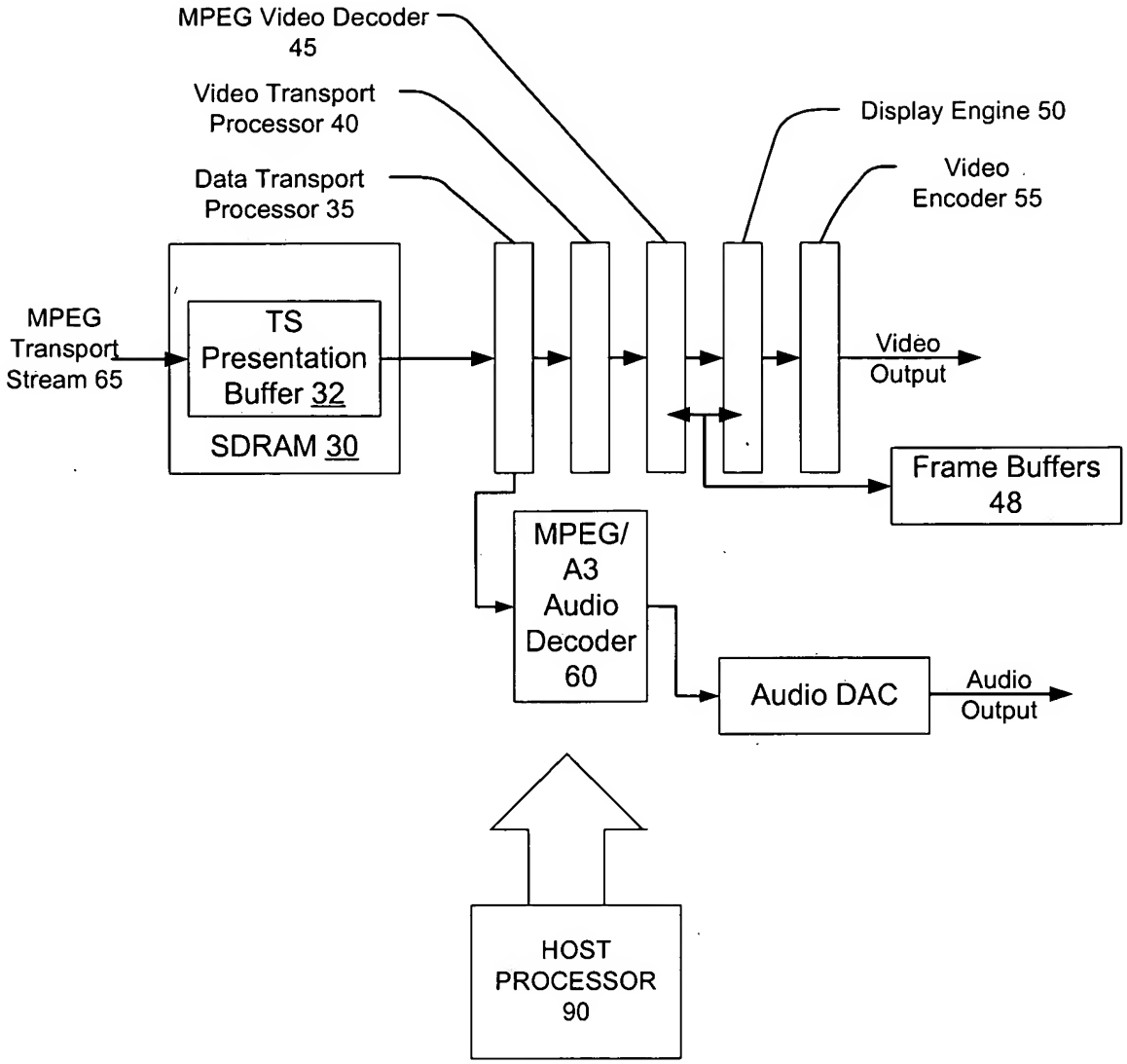

MPEG Video Decoder 45
Video Transport Processor 40
Data Transport Processor 35
Display Engine 50
Video Encoder 55
MPEG Transport Stream 65
TS Presentation Buffer 32
SDRAM 30
Video Output
Frame Buffers 48
MPEG/ A3 Audio Decoder 60
Audio DAC
Audio Output
HOST PROCESSOR 90

FIG. 1

100(0)	$Y_0Cr_0Cb_0$	Y_1	$Y_2Cr_1Cb_1$	Y_3	$Y_4Cr_2Cb_2$	Y_5	...	$Y_{x-1}Cr_{(x-1)/2}Cb_{(x-1)/2}$	Y_x
100(1)	$Y_0Cr_0Cb_0$	Y_1	$Y_2Cr_1Cb_1$	Y_3	$Y_4Cr_2Cb_2$	Y_5	...	$Y_{x-1}Cr_{(x-1)/2}Cb_{(x-1)/2}$	Y_x
100(2)	$Y_0Cr_0Cb_0$	Y_1	$Y_2Cr_1Cb_1$	Y_3	$Y_4Cr_2Cb_2$	Y_5	...	$Y_{x-1}Cr_{(x-1)/2}Cb_{(x-1)/2}$	Y_x
100(3)	$Y_0Cr_0Cb_0$	Y_1	$Y_2Cr_1Cb_1$	Y_3	$Y_4Cr_2Cb_2$	Y_5	...	$Y_{x-1}Cr_{(x-1)/2}Cb_{(x-1)/2}$	Y_x
:									
:									
100(N)	$Y_0Cr_0Cb_0$	Y_1	$Y_2Cr_1Cb_1$	Y_3	$Y_4Cr_2Cb_2$	Y_5	...	$Y_{x-1}Cr_{(x-1)/2}Cb_{(x-1)/2}$	Y_x

FIGURE 2

48Y(0)	Y_0, Y_1, Y_2.....Y_{15}
48Y(1)	Y_{16}, Y_{17}, Y_{18}.....Y_{31}
:	
48Y(i)	$Y_{16i}, Y_{16i+1}, Y_{16i+2}$.....$Y_{16i+15}$
:	

48Y

48C(0)	$Cr_0\ Cb_0, Cr_1\ Cb_1$, ... $Cr_7\ Cb_7$
48C(0)	$Cr_8\ Cb_8, Cr_9\ Cb_9$, ...$Cr_{15}\ Cb_{15}$
:	
48C(i)	$Cr_{8i}\ Cb_{8i}, Cr_{8i+1}\ Cb_{8i+1}$, ... $Cr_{8i+7}\ Cb_{8i+7}$
:	

48C

FIGURE 3A

U_i => | $Y_{2i}Cr_iCb_i$ Y_{2i+1} |

48(0)	U_0, U_1, U_2, U_3
48(1)	U_4, U_5, U_6, U_7
48(2)	U_8, U_9, U_{10}, U_{11}
:	
48(i)	$U_{4i}, U_{4i+1}, U_{4i+2}, U_{4i+3}$

FIGURE 3B

48Y(0)	$Y_0, Y_1, Y_2 \ldots\ldots Y_{15}$
48Y(1)	$Y_{16}, Y_{17}, Y_{18} \ldots\ldots Y_{31}$
:	
48Y(i)	$Y_{16i}, Y_{16i+1}, Y_{16i+2} \ldots\ldots Y_{16i+15}$
:	

48Y

48R(0)	Cr, Cr, ... Cr
:	
48R(i)	Cr, Cr, ... Cr
:	

48CR

48R(0)	Cr, Cr, ... Cr
:	
48R(i)	Cr, Cr, ... Cr
:	

48CB

FIGURE 3C

$b_{0...7}$	$b_{8...15}$	$B_{16...23}$	$b_{24...31}$	$b_{32...39}$	$b_{40...47}$	$b_{48...55}$	$b_{56...63}$	$b_{64...71}$	$b_{72...79}$	$b_{80...87}$	$b_{88...95}$	$b_{96...103}$	$b_{104...111}$	$b_{112...119}$	$b_{120...127}$
Cb	Y_0	Cr	Y_1	Cb	Y_0	Cr	Y_1	Cb	Y_0	Cr	Y_1	Cb	Y_0	Cr	Y_1
U_{4i}				U_{4i+1}				U_{4i+2}				U_{4i+3}			

FIGURE 4A

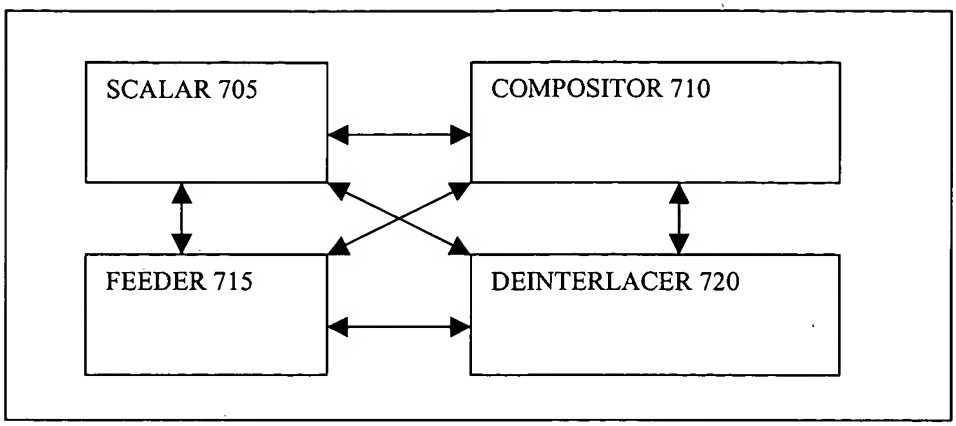
$b_{127...120}$	$b_{119...112}$	$b_{111...104}$	$b_{103...96}$	$b_{95...88}$	$b_{87...80}$	$b_{79...72}$	$b_{71...64}$	$b_{63...56}$	$b_{55...48}$	$b_{47...40}$	$b_{39...32}$	$b_{31...24}$	$b_{23...16}$	$b_{15...8}$	$b_{7...0}$
Cb	Y_0	Cr	Y_1	Cb	Y_0	Cr	Y_1	Cb	Y_0	Cr	Y_1	Cb	Y_0	Cr	Y_1
U_{4i}				U_{4i+1}				U_{4i+2}				U_{4i+3}			

FIGURE 4B

$b_{0...7}$	$b_{8...15}$	$b_{16...23}$	$b_{24...31}$	$b_{32...39}$	$b_{40...47}$	$b_{48...55}$	$b_{56...63}$	$b_{64...71}$	$b_{72...79}$	$b_{80...87}$	$b_{88...95}$	$b_{96...103}$	$b_{104...111}$	$b_{112...119}$	$b_{120...127}$
Y_{16i}	Y_{16i+1}	Y_{16i+2}	Y_{16i+3}	Y_{16i+4}	Y_{16i+5}	Y_{16i+6}	Y_{16i+7}	Y_{16i+8}	Y_{16i+9}	Y_{16i+10}	Y_{16i+11}	Y_{16i+12}	Y_{16i+13}	Y_{16i+14}	Y_{16i+15}
U_{4i}				U_{4i+1}				U_{4i+2}				U_{4i+3}			

FIGURE 5

FIG. 6



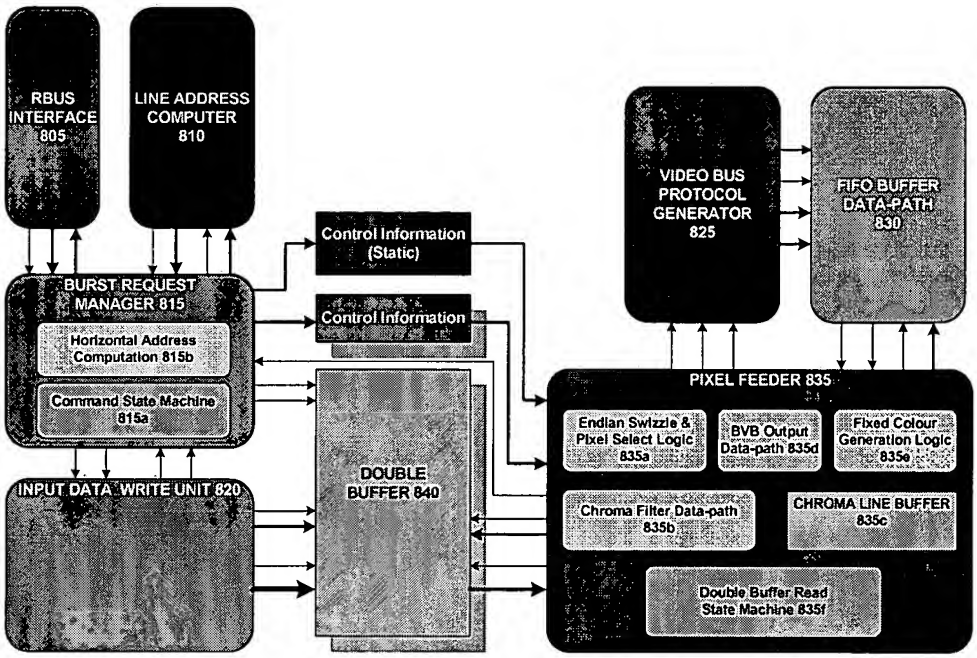


FIGURE 7

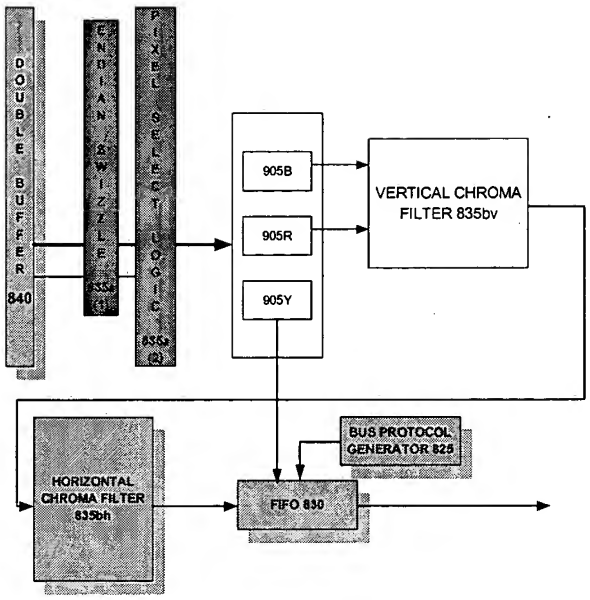
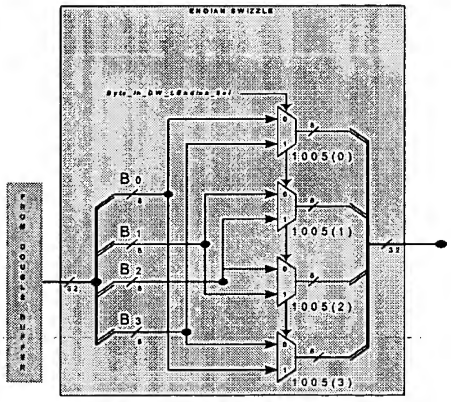
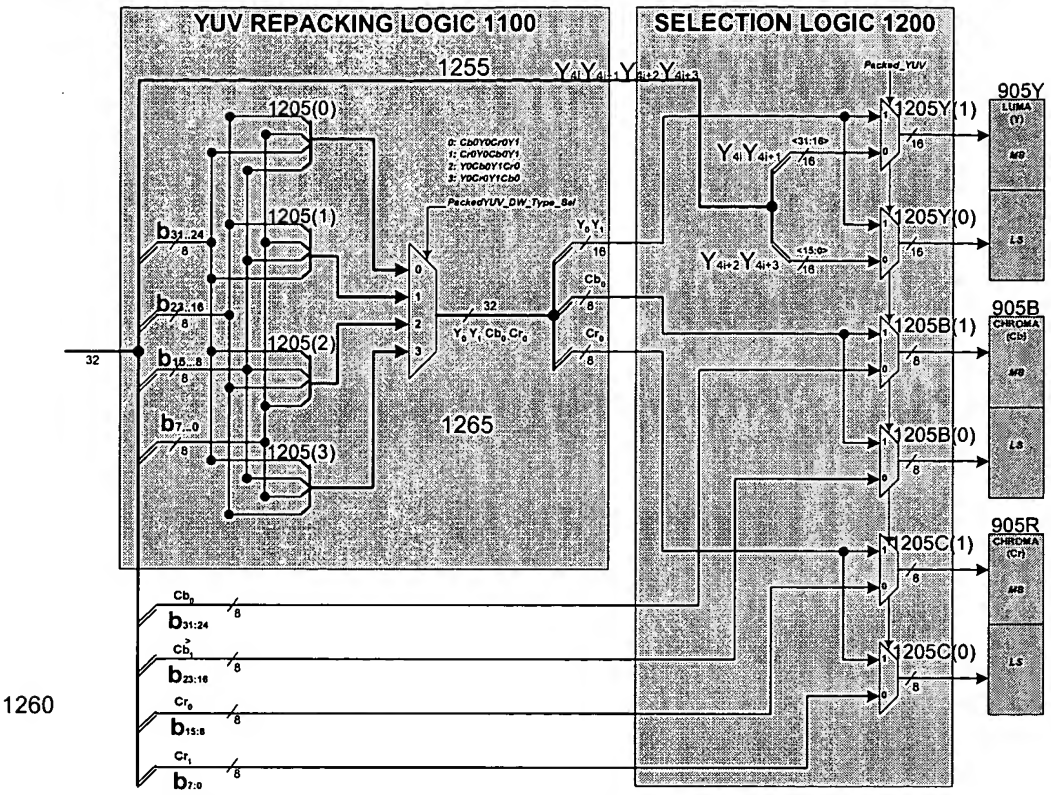


FIGURE 8



Endian Swizzle 835a(1)

FIGURE 9



PIXEL SELECTION LOGIC
835a(2)

FIGURE 10